

MRID No. 438140-03

DATA EVALUATION RECORD
§ 71-4 -- AVIAN REPRODUCTION TEST

1. **CHEMICAL:** Dicamba. **PC Code No.:** 029806

2. **TEST MATERIAL:** Technical Dicamba. **Purity:** 86.9%

3. **CITATION:**

Authors: J.B. Beavers, D. Haberlein, L.R. Mitchell, and M. Jaber

Title: Technical Dicamba: A Reproduction Study with the Mallard

Study Completion Date: October 7, 1994

Laboratory: Wildlife International Ltd., Easton, MD.

Sponsor: Sandoz Agro, Inc., Des Plaines, IL

Laboratory Report ID: 131-183

MRID No.: 438140-03

DP Barcode: D220472

4. **REVIEWED BY:** Rosemary Graham Mora, M.S., Associate Scientist
KBN Engineering and Applied Sciences, Inc.

Signature: *[Signature]*

Date: 3/4/96

APPROVED BY: Pim Kosalwat, Ph.D., Senior Scientist
KBN Engineering and Applied Sciences, Inc.

Signature: *P. Kosalwat*

Date: 3/4/96

5. **APPROVED BY:**

Signature: *[Signature]*

Date: 5-30-96

6. **STUDY PARAMETERS:**

Scientific Name of Test Organism: *Anas platyrhynchos*

Age of Test Organisms at Test Initiation: 19 weeks

Definitive Study Duration: 21 weeks

7. **CONCLUSIONS:** This study is scientifically sound and meets the guideline requirements for an avian reproduction study using mallard ducks. The NOEC for mallard ducks exposed to technical Dicamba was 800 ppm based upon an apparent reduction in hatchability at 1600 ppm.

Results Synopsis

Most sensitive endpoints: Number of hatchlings and 14-day survivors, and hatchlings and 14-day survivors as percentages of eggs laid and eggs set.

NOEC: 800 ppm (695 ppm ai)

LOEC: 1600 ppm (1390 ppm ai)



029806

VALIDATION SHEET

CRF # _____ PAGE _____ OF _____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC #	CHEMICAL NAME	Validator: <i>/s/</i>					Date:		
26.5%		Banvel 2S <i>029806</i>	Charles A. Bowen II					8/11/78		
			Test Type:							
			Acute oral LD50 in Mallard duck							
			Test ID.# 233292							

CITATION: Fink, Robert. 1977. Acute Oral LD50 - Mallard Duck
Banvel 2S Final Report. Conducted by Wildlife International
LTD. Sponsored by Velsicol Chemical Corporation.

VALIDATION CATEGORY: Invalid for formulated product

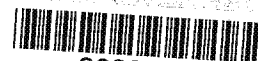
RESULTS: The eight day acute oral LD50 is estimated to be greater than 4640.0 mg/kg. This value was generated by administering dosages of toxic material that were assumed to contain 100.0% active ingredient. Banvel 2S contains only 26.5% active ingredient. The above LD50 value when adjusted for the technical grade amounts to an estimated Acute oral LD50 of greater than 1229.6 mg/kg. See attached abstract for details of experimental design and procedures.

VALIDATION CATEGORY RATIONALE:

The above study was deemed Invalid because the registrant failed to indicate whether or not experimental birds were properly fasted prior intubation of the experimental material. No statistical analysis was conducted as only one experimental mortality occurred during the course of this bioassay.

CATEGORY REPAIRABILITY:

This bioassay will be re-examined provided the testing facility indicates whether or not both experimental and control birds were properly fasted prior to intubation of toxic material and the control vehicle.



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VALIDATION SHEET

CRF # _____

PAGE _____ OF _____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC #	CHEMICAL NAME	Validator: <i>CS</i> Charles A Bowen II					Date: 8/11/77		
26.5%		Banvel 2S <i>Sodium salt?</i> <i>029506</i>	Test Type: 48-hour static invertebrate (Daphnia) bioassay							
			Test ID.# 233292							

CITATION: Vilkas, Algirdas. 1977. The Acute Toxicity of Banvel 2S to the Water Flea Daphnia magna Straus. Conducted by Union Carbide Environmental Services. Sponsored by Velsicol Chemical Company.

VALIDATION CATEGORY: Core for formulated product.

RESULTS: 48-hour LC50 = 38.1 mg/l
95% confidence limits = (32.7 to 44.3) mg/l
The no effect level was estimated to be less than 18.0 mg/l.

Banvel 2S contains only 26.5% active ingredient. The above values when corrected for the technical would be as follows:

48-hour LC50 = 10.09 mg/l (8.66 to 11.73) mg/l
No effect level was estimated to be less than 4.77 mg/l.

Physical/Chemical parameters existing during bioassay.

Water quality = soft
Temperature = 19.0°C + 1°C
pH = 7.4-7.52
Hardness = 52.0 mg/l as CaCO₃
Total alkalinity = 27.0 mg/l
Specific conductivity = 125 umhos/cm

VALIDATION CATEGORY RATIONALE:

The above study was found to concur with EPA present guidelines concerning freshwater static bioassays on Daphnia magna. A Finney Probit analysis was conducted on the testing facility's raw data; results of this statistical check are shown on the following page.



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(4)

EEE BRANCH REVIEWDATE: IN _____ OUT 8/15/78 IN _____ OUT _____ IN _____ OUT _____

FISH & WILDLIFE

ENVIRONMENTAL CHEMISTRY

EFFICACY

FILE OR REG. NO. 876-ERG

PETITION OR EXP. PERMIT NO. _____

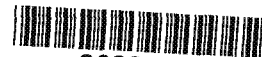
DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

TYPE PRODUCTS(S): I, D, (H) F, N, R, S _____DATA ACCESSION NO(S). 233292PRODUCT MGR. NO. TaylorPRODUCT NAME(S) Banvel 2SCOMPANY NAME Velsicol Chemical CorporationSUBMISSION PURPOSE Data Review

CHEMICAL & FORMULATION

Sodium salt of dicamba = 23.32%Sodium salts of related acids = 3.18%Inert ingredients = 73.50%

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EEE BRANCH REVIEW

DATE: IN 2/25/77 OUT 2/25/77 IN _____ OUT _____

FISH & WILDLIFE

ENVIRONMENTAL CHEMISTRY

EFFICACY

FILE OR REG. NO. 876-255

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

TYPE PRODUCT(S): I, D, H, F, N, R, S

PRODUCT MGR. NO. Taylor (25)

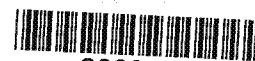
PRODUCT NAME(S) Banvel 2S

COMPANY NAME Velsicol Chem. Corp.

SUBMISSION PURPOSE New Application (Registration)

CHEMICAL & FORMULATION Sodium Salt of dicamba

3, 6-dichloro-o-anisic acid 23.32%
Sodium salts of related acids 3.18%



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T04D1C03
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DATA EVALUATION RECORD

1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Beavers, J. (1981) Eight-Day Dietary LC50 - Bobwhite Quail CN-10-4359T 50WP - Final Report; received 2/11/82 under 876-443; unpublished report prepared by Wildlife International Ltd for Velsicol Chemical Corp, Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins / S /
Plant Physiologist
EEB/HED
5. DATE REVIEWED: 4/5/82
6. TEST TYPE: Avian Dietary LC50 - Bobwhite Quail
7. REPORTED RESULTS:

The author reported that the dietary LC50 of the test material to the bobwhite quail is greater than 5620 ppm aluminum dicamba (approximately 10,000 ppm of the 50 WP).

8. REVIEWER'S CONCLUSIONS:


This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for an avian dietary LC50 study on the formulated product at this time.



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TouD1C06
029806

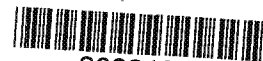
DATA EVALUATION RECORD

1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Forbis, A. (1981) Acute Toxicity of CN-10-4359T to Daphnia magna; received 2/11/82 under 876-443; unpublished report prepared by Analytical Bio-Chemistry Laboratories, Inc for Velsicol Chemical Corp., Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins
Plant Physiologist
EEB/HED 
5. DATE REVIEWED: 4/6/82
6. TEST TYPE: Aquatic Invertebrate Acute LC₅₀ - Daphnia magna
7. REPORTED RESULTS:

The author reported that the 48 hr LC₅₀ of VEL 4359 50W to Daphnia magna is 170 ppm, with a 95% confidence interval of 100-320 ppm. The LC₅₀ is equivalent to 93 ppm ai aluminum dicamba.

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for an aquatic invertebrate acute LC₅₀ study on the formulated product at this time.



2022194

Touidic04
029806

DATA EVALUATION RECORD

1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Griffer, J. (1981) Acute Toxicity of CN-10-4359T to Rainbow Trout; received 2/11/82 under 876-443; unpublished report prepared by Analytical Bio-Chemistry Laboratories, Inc for Velsicol Chemical Corp., Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins /5/
Plant Physiologist
EEB/HED
5. DATE REVIEWED: 4/6/82
6. TEST TYPE: Fish Acute LC₅₀ - Rainbow Trout
7. REPORTED RESULTS:

The author reported that the 96 hr LC₅₀ of VEL 4359 50W to the rainbow trout is 88 ppm, which is equivalent to 48 ppm aluminum dicamba. EEB calculate a 95% confidence interval of 56 ppm to infinity.

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for a fish acute LC₅₀ study on the formulated product at this time.



2022195

TouDicos
029706

DATA EVALUATION RECORD

1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Griffen, J. (1981) Acute Toxicity of CN-10-4359T to Bluegill Sunfish received 2/11/82 under 876-443; unpublished report prepared by Analytical Bio-Chemistry Laboratories, Inc for Velsicol Chemical Corp., Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins
Plant Physiologist /S/
EEB/HED
5. DATE REVIEWED: 4/6/82
6. TEST TYPE: Fish Acute LC₅₀ - Bluegill sunfish
7. REPORTED RESULTS:

The author reported that the 96 hr LC₅₀ of VEL 4359 50W to the bluegill sunfish is 130 ppm with a 95% confidence interval of 100-180 ppm. The LC₅₀ is equivalent to 71 ppm ai aluminum dicamba.

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for a fish acute LC₅₀ study on the formulated product at this time.



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TouDico1
029806

DATA EVALUATION RECORD

1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Beavers, J. (1981) Acute Oral LD₅₀ - Mallard Duck CN-10-4359T 50WP - Final Report; received 2/11/82 under 876-443; unpublished report prepared by Wildlife International Ltd for Velsicol Chemical Corp, Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins /SF
Plant Physiologist
EEB/HED
5. DATE REVIEWED: 3/1/82
6. TEST TYPE: Avian acute oral LD₅₀ - Mallard Duck
7. REPORTED RESULTS:

The author reported that the acute oral LD₅₀ of the test material to the mallard duck is greater than 2510 mg aluminum dicamba per kg of bird weight (approximately 4560 mg of the 50 WP per kg).

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for an avian acute oral LD₅₀ study on the formulated product at this time.



2022197

TouDicoz
029806

DATA EVALUATION RECORD

1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Beavers, J. (1981) Eight-Day Dietary LC50 - Mallard Duck CN-10-4359T 50WP - Final Report; received 2/11/82 under 876-443; unpublished report prepared by Wildlife International Ltd for Velsicol Chemical Corp, Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins
Plant Physiologist /S/
EEB/HED
5. DATE REVIEWED: 3/18/82
6. TEST TYPE: Avian acute oral LC50 - Mallard Duck
7. REPORTED RESULTS:

The author reported that the dietary LC50 of the test material to the mallard duck is greater than 5620 ppm aluminum dicamba (approximately 10,000 ppm of the 50 WP).

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for an avian dietary LC50 study on the formulated product at this time.

Don



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DATA EVALUATION RECORD

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Copies
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1. CHEMICAL: Dicamba, Aluminum salt
2. FORMULATION: VEL 4359 50% WP - contains 55% dicamba aluminum salt (ie., 50% dicamba) plus 11% related aluminum salts
3. CITATION: Beavers, J. (1981) Acute Oral LD₅₀ - Mallard Duck CN-10-4359T 50WP - Final Report; received 2/11/82 under 876-443; unpublished report prepared by Wildlife International Ltd for Velsicol Chemical Corp, Chicago, Ill (in Acc #246814)
4. REVIEWED BY: Stephen M. Hopkins /5/
Plant Physiologist
EEB/HED
5. DATE REVIEWED: 3/1/82
6. TEST TYPE: Avian acute oral LD₅₀ - Mallard Duck
7. REPORTED RESULTS:

The author reported that the acute oral LD₅₀ of the test material to the mallard duck is greater than 2510 mg aluminum dicamba per kg of bird weight (approximately 4560 mg of the 50 WP per kg).

8. REVIEWER'S CONCLUSIONS:

This study is scientifically sound, but is classified as supplemental due to failure to test the technical grade of the active ingredient, and lack of requirement for an avian acute oral LD₅₀ study on the formulated product at this time.



2022199

CASE GS0065 DICAMBA PM 500 06/09/82

CHEM 029806 Sodium dicamba (3,6-dichloro-2-anisic

BRANCH EEB DISC 40 TOPIC 05100542

FORMULATION 90 - FORMULATION NOT IDENTIFIED

FICHE/MASTER ID 00025328 CONTENT CAT 01

Fink, R. (1975) Final Report: Eight-Day Dietary LC-50--Bobwhite
Quail: Project No. 107-105. (Unpublished study including offi-
cial analytical report, received Jan 20, 1975 under 876-EX-29;
prepared by Truslow Farms, Inc., submitted by Velsicol Chemical
Corp., Chicago, Ill.; CDL:210050-J)

SUBST, CLASS = S.

DIRECT RVW TIME = (MH) START-DATE END DATE

REVIEWED BY: L.W. Touart
TITLE: FISHERIES BIOLOGIST
ORG: EEB/HED
LOC/TEL:

SIGNATURE:

L.W. Touart

DATE: 1/10/83

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:



2022200

CASE GS0065

DICAMBA

PM 500 06/09/82

CHEM 029806

Sodium dicamba (3,6-dichloro-2-anisic

BRANCH EEB DISC 40 TOPIC 05103043

FORMULATION 90 - FORMULATION NOT IDENTIFIED

FICHE/MASTER ID 00022539

CONTENT CAT 01

Bentley, R.E. (1974) Acute Toxicity of Banvel 2S to Bluegill
("Lepomis macrochirus"). (Unpublished study received Jan
20, 1975 under 876-EX-29; prepared by Bionomics, EG&G Environ-
mental Consultants, submitted by Velsicol Chemical Corp., Chi-
cago, Ill.; CDL:210050-A)

SUBST. CLASS = S.

DIRECT RVW TIME = (MH) START-DATE END DATE

REVIEWED BY: L.W. Touart
TITLE: Fisheries Biologist
ORG: EEB/HED
LOC/TEL:

SIGNATURE: L.W. Touart

DATE: 1/4/83

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:



2022201

CASE GS0065

DICAMBA

PM 500 06/09/82

CHEM 029806

Sodium dicamba (3,6-dichloro-2-anisic

BRANCH EEB

DISC 40 TOPIC 05103043

FORMULATION 90 - FORMULATION NOT IDENTIFIED

FICHE/MASTER ID 00029623

CONTENT CAT 01

Bentley, R.E. (1974) Acute Toxicity of Banvel 2S to Rainbow Trout
("Salmo gairdneri"). (Unpublished study received Jan 20,
1975 under 876-EX-29; prepared by Bionomics, EG&G, Environmental
Consultants, submitted by Velsicol Chemical Corp., Chicago,
Ill.; CDL:210050-B)

SUBST. CLASS = S.

DIRECT RVW TIME =

(MH) START-DATE

END DATE

REVIEWED BY: L.W. Touart

TITLE: FISHERIES BIOLOGIST

ORG: EEB/HED

LOC/TEL:

SIGNATURE: L.W. Touart

DATE: 1/5/83

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:



2022202

CASE GS0065 DICAMBA

PM 500 06/09/82

CHEM 029806

Sodium dicamba (3,6-dichloro-2-anisic

BRANCH EEB DISC 40 TOPIC 05100542

FORMULATION 90 - FORMULATION NOT IDENTIFIED

FICHE/MASTER ID 00030102

CONTENT CAT 01

Fink, R. (1975) Final Report: Eight-Day Dietary LC50--Mallard Ducks: Project No. 107-106. (Unpublished study including official analytical report, received Nov 18, 1976 under 876-255; prepared by Truslow Farms, Inc., submitted by Velsicol Chemical Corp., Chicago, Ill.; CDL:226933-D)

SUBST. CLASS = S.

DIRECT RVW TIME = (MH) START-DATE END DATE

REVIEWED BY: L.W. Tourant
TITLE: Fisheries Biologist
ORG: EEB/HED
LOC/TEL:

SIGNATURE:

LW Tourant

DATE: 11/10/83

APPROVED BY:

TITLE:

ORG:

LOC/TEL:

SIGNATURE:

DATE:



2022203

029806

VALIDATION SHEET

CRF # _____ PAGE _____ OF _____

FORMULATION: % a.i. SC # CHEMICAL NAME 26.5% Banvel 2S 029806			IA	IB	T	FW	EC	R		
			Validator: 161						Date:	
			Charles A. Bowen II						8/11/78	
			Test Type: Eight Day dietary on Bobwhite quail							
			Test ID.# 233292							

CITATION: Fink, Robert. 1977. Eight-Day Dietary LC50--Bobwhite Quail Banvel 2S Final Report. Conducted by Wildlife International LTD. Sponsored by Velsicol Chemical Corporation.

VALIDATION CATEGORY: Core for formulated product.

RESULTS: The acute LC50 of Banvel 2S in the Bobwhite quail is estimated by the testing facility to be greater than 10,000 ppm. The above value was, however, computed on the bases that Banvel 2S was assumed to contain 100% active ingredient. Banvel 2S contains only 26.5% active ingredient. The above toxicity value when adjusted for the technical amounts a LC50 value greater than 2650.0 ppm.

This value also represents a no effect level for Banvel 2S on 14 day old Bobwhite quail as no mortalities occurred. See attached abstract for details of test procedures.

VALIDATION CATEGORY RATIONALE:

The above study was found to concur with the EPA's present guidelines concerning eight day dietary studies. No statistical analysis was conducted as no mortalities occurred.

CATEGORY REPAIRABILITY: N.A.



2022188